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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/554,599	05/26/2000	KAZUO IMAMURA	0819-383	3944

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MCLEAN, VA 22102

EXAMINER

KIANNI, KAVEH C

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 07/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/554,599

Applicant(s)

IMAMURA ET AL.

Examiner

Kevin C Kianni

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 21-38 is/are pending in the application.
- 4a) Of the above claim(s) 32-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) 21-24 is/are allowed.
- 6) ☐ Claim(s) 25 and 27-31 is/are rejected.
- 7) ☒ Claim(s) 38 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 May 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_.

### **ETAILED ACTION**

1. Applicant's election without traverse of claims 20-31 in paper No. 7 and 9 is acknowledged. Claim 20 has been is canceled by the applicant and claims 28-31 are includes in the examination and therefore this restriction without traverse is made FINAL.

### ***Claim Objections***

2. Claim 38 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim 38 depends to the independent claims as well as dependent claims. See MPEP § 608.01(n). Accordingly, the claim 38 not been further treated on the merits.

### ***Reason for allowance***

3. Claims 21-24 are allowed because the prior art of record, taken alone or in combination, fails to disclose or render obvious a concentration of Ge is substantially the same as a concentration of Ge included in a core of another optical fiber to be connected to the fiber grating in combination with the rest of the limitations of the base claim.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 25, 27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chandross et al. (US 5773486).

Regarding claim 25, 29 and 38, Chandross teaches a method of fabricating a fiber grating (shown in fig. 1) comprising the steps of fabricating a glass fiber structure including a core where a grating is to be written and a cladding for covering the core (col. 4, lines 5-13); forming a coat layer of a UV transmitting resin for covering an outer face of the glass fiber structure (see col. 7, lines 3-20); and writing the grating in the core by irradiating the core with first UV through the core layer (see col. 4, lines 5-14) of which wavelength is longer than 235 nm and shorter than or equal to 260 nm (see col. 4, lines 16-21), wherein the step of forming the coat layer includes a step of curing the UV transmitting resin through irradiation having a different wavelength from the first UV (see col. 7, lines 1-20).

However, Chandross does not specifically state wherein the above wavelength range 235-260 of writing grating on the core is 260-350 nm; and the above irradiation is using second UV and wherein, in the step of writing the grating, an outer face of the coat layer is internally in contact with an outer edge of a beam pattern of the UV. It would have been obvious to a person of ordinary skill in the art when the invention was made to modify the grating range of Chandross in order to obtain an optimum range for grating that creates a durable/reliable fiber since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233; Regarding

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limitation (B-C) It is well known to those of ordinary skill in the art that a UV light operated in two different wavelengths at two different times is known for applying second UV for purpose of curing the coating (col. 7, lines 15-20) is a specific wavelength, plotted in fig. 5, and since the coating is on the fiber where the UV radiation takes place it would be internally in contact with an outer edge of a beam pattern of the UV because the fiber grating system is designed without a need for stripping the fiber coating (col. 1, lines 10-13) thus reducing costs.

Regarding claim 27, Chandross further teaches wherein the coat layer is formed by a single coating method in a thickness of 30  $\mu\text{m}$  through 50  $\mu\text{m}$  (col. 8, lines 2-3).

6. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over combination of Chandross et al. and Anderson et al. (US 5327515).

Regarding claim 28, Chandross teaches a method of fabricating a fiber grating (shown in fig. 1) comprising the steps of: fabricating a glass fiber structure including a core where a grating is to be written and a cladding for covering the core (see col. 1, lines 6-13 and col. 4, lines 5-13); forming a coat layer of a UV transmitting resin for covering an outer face of the glass fiber structure (see col. 7, lines 3-20); and writing the grating in the core by irradiating the core with first UV through the core layer (see col. 4, lines 5-14), writing the grating in the core by irradiating the core with first UV through the coat layer (col. 1, lines 5-13); wherein the step of writing the grating includes steps of : placing all the coat layer, the cladding and the core in a position between radiation

source and a focal point of the radiation source and within a beam pattern of the UV converged toward the focal point; and irradiating the core with the UV (col. 7, lines 1-52); .

However, Chandross does not explicitly teach wherein the above focal point of the radiation source is the focal point of a cylindrical lens in which the fiber grating is implemented through a cynderical lens and wherein, in the step of writing the grating, an outer face of the coat layer is internally in contact with an outer edge of a beam pattern of the UV. Nevertheless, Chandross states that the above fiber grating takes place while the focal point of beam is located 2.5 mm behind the fiber (see col. 7, lines 46-52). Anderson teaches a fiber grating using a cylindrical lens 55 (shown in fig. 2, item 55). Thus, Anderson facilitates varying the focal point of the cylindrical/magnification to obtain different periods of grating (see col. 3, lines 8-21). Thus, it would have been obvious to a person of ordinary skill in the art when the invention was made to modify Chandross' fiber grating system shown in fig. 1 by adding Anderson's cylindrical lens 55 in between the lens source and the fiber so as to produce a fiber grating that includes above limitations, since the resultant fiber grating system would implement grating without the need for stripping of a fiber coating (col. 1, lines 5-13), thus reducing costs.

7. Claims 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over combination of Chandross et al. and DiGiovanni et al. (US 5802236).

Regarding calims 30-31, as stated above Chandross teaches all limitations of claim 25. However, Chandross does not explicitly teach wherein wherein the core is

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loaded with hydrogen before irradiating with the first UV and wherein the core is co-doped with Ge and Sn. Nevertheless, Chandross states that the core is doped with different dopants such as Ge that is sensitized by hydrogen (see col. 1, line 64-col. 2, line 6). DiGiovanni teaches a fiber grating that includes the above limitations (see col. 9, lines 8-14). Thus, Anderson provides dispersion compensation in fiber grating (col. 3, lines 5-11). Thus, it would have been obvious to a person of ordinary skill in the art when the invention was made to modify Chandross' fiber grating system shown in fig. 1 by adding Digiovanni's doping materials Ge and Sn in the core in which the core is loaded with Hydrogen so as to produce a fiber grating that includes above limitations, since the resultant fiber grating system would implement grating without the need for stripping of a fiber coating (col. 1, lines 5-13), thus reducing costs.

### ***Response to Amendment***

8. Applicant's amendments/arguments filed on March 11, 2003 have been fully considered, and thus has provided with new reference(s) to overcome applicant's amendment and/or arguments. Since claims 28-31 were not treated in paper no. 7, the examiner has made this action as non-final.

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**Contact Information**

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaveh Cyrus Kianni whose telephone number is (703) 308-1216.

The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 6:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached at (703) 308-4881.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

(703) 308-7722, (for formal communications intended for entry)

**or:**

(703) 308-7721, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand delivered responses should be brought to Crystal Plaza 4, 2021 South Clark Place, Arlington, VA., Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956.

Kevin Cyrus Kianni  
Patent Examiner  
Group Art Unit 2877

Frank Font  
Supervisory Patent Examiner  
Group Art Unit 2877

June 17, 2003

